R. I. S. B.

BANGALORE

FIRST PRELIMINARY EXAMINATION 2019-20

STD: X

SUB: CHEMISTRY

MARKS: 80

TIME: 2 Hrs

- *Answers to this Paper must be written on the paper provided separately.*
- *You will not be allowed to write during the first 15 minutes. This time is to be spent in reading the Question Paper.*
- *The time given at the head of this paper is the time allowed for writing the answers.*

- *Section I is compulsory. Attempt any four questions from Section II.*
- *The intended marks for questions or parts of questions are given in brackets [ ].*

SECTION - I [40 Marks]

Attempt all questions from this Section

Q I. A. Fill in the blanks: **[5]**

1. The nonmetallic component in stain less steel is _____
2. Alkanes are commonly known as _____
3. _____ gas is evolved when dil HCℓ is heated with iron (ii) sulphide.
4. The catalyst used in Haber process _____
5. Sulphur can be converted in to sulphuric acid using _____ HNO_3

B. Choose the correct answer from the following: **[5]**

1. In the given equation identify the role played by conc. Sulphuric acid.

   $C + 2H_2SO_4 \rightarrow CO_2 + 2H_2O + 2SO_2$

   a. Nonvolatile acid
   b. Oxidizing agent
   c. Dehydrating agent
   d. Reducing agent

2. Dehydrohalogenation of the compound 'X' with alcoholic KOH produce ethene. The compound 'X'is

   a. ethylbromide
   b. Ethylene dichloride
   c. methyl chloride
   d. Methyl bromide

3. In the periodic table, the element with Atomic number 19 belong to:

a. 4th period group1
b. 4th period group 17
c. 1st period group 4
d. 4th period group 9

4. During ionization metal lose electron this changes is called :
a. reduction
b. Redox
c. Oxidation
d. Displacement

5. Lead chloride is prepared by:
a. Synthesis
b. Precipitation
c. Neutrilisation
d. Direct combination

C. Write and balance the following equation: [5]

1. Preparation of Ethyne from calcium carbide
2. Copper is treated with cold dil Nitric acid.
3. Ammonia is reacted with Excess Chlorine
4. Calcium bi carbonate is treated with DilHcl
5. Acetic acid treated with sodium hydroxide

D. State observation for the following: [5]

1. A few drops of conc sulphuric acid is added with hydrated copper sulphate.
2. Alkaline gas passed over copper oxide.
3. DilHcl is added to lead nitrate solution.
4. Ammonium hydroxide is added to ferrous sulphate solution in small quantity.
5. Excess ammonia reacted with greenish yellow gas.

E. Identify the term: [5]

1. A salt which is formed by incomplete neutralization of a base by an acid.
2. A bond formed when the combining atom have very high electronegative difference.
3. The nonmetal in period 3 having valency one.

4. The gas liberated when ethanol treated with sodium

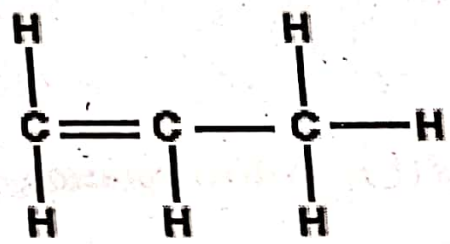
5. The electrolyte used for electroplating an article with silver.

F. Give reasons for the following: [5]

1. Pure water is termed as non –electrolyte, while acidified water- an electrolyte.
2. Electron affinity of Noble gas elements are Zero.
3. Carbon tetra chloride does not conduct electricity.
4. Concentrated sulphuric acid may be added during esterification of acetic acid.
5. The blue colour of aq. Coppersulphate does not change when it is electrolyzed with copper electrode.

G. Write IUPAC NAME /structural formula of: [5]

1.



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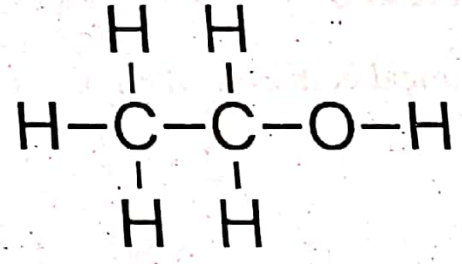

3. 2, 3-dimethylbutane

4. propionic acid

5. 2-pentyne

II. Answer the following questions:

1. StateAvogadro Law. [1]

2. Oxygen is evolved by heating $KC\ell O_3$ using catalyst ~~MnO_2~~ MnO_2 [4]

   a. Calculate the mass of $KClO_3$ required to produce 6.72 lit of O_2 at STP [K=39, Cℓ=35.5, O=16]

   b. Calculate the no. of moles of oxygen present in the above volume and also number of molecules.

SECTION – II [40 Marks]

Any Four

Q II. A. During electrolysis of Molten Alumina. [6]

1. Why electrolytic mixture is covered with coke or saw dust.
2. Why carbon Anode is periodically replaced.
3. At which electrode aluminium is obtained. Give equation for the formation of aluminium.
4. Name two main alloy of aluminium.

B. $Metal\ (A) + C\ell_2 \rightarrow Reddish\ brown\ scales\ (B) - NaOH\ solution \rightarrow reddish\ brown\ precipitation (C)$ [4]

1. Identify A,
2. Write the balanced equation for the conversion of A to B.
3. Name the product formed and write balanced chemical equation when 'C' is heated.

Q III.

1. Write the following conversions: [5]

$Chloroethane - A \rightarrow Ethyl\ alcohol - B \rightarrow ethene - C \rightarrow ethane - D \rightarrow carbon\ di\ oxide - E \rightarrow Ethyl\ acetate$

2. During electrolysis of copper sulphate using active electrode: [4]

a. Write the equation and types of reaction takes place at both the electrode.

b. State the observations at both electrodes.

3. Write the composition of brass. [1]

Q IV.

A. Some elements are given in the given in the table in their own symbol and position in the periodic table, while others are shown with a letter. With the reference to the table: [6]

Group no.	1	2	13	14	15	16	17	18
	Li		D			O	J	Ne
	A	Mg	E	Si		H	K	
	B	C		F	G			L

1. Which is the most electronegative?
2. How many valence electrons are present in G?
3. Write the formula of the compound between B and H.
4. In the compound between F and J. What type of bond will be formed?
5. Draw the electron Dot structure for the compound formed between C and K.

B. Write the balanced equation for the following: [4]

1. Sugar with conc. sulphuric acid.
2. Zinc nitrate reacting with sodium carbonate.
3. Insoluble base with dil. Acid.
4. Ethylene dibromide reacting with hot conc. alcoholic KOH.

Q V.

1. Empirical formula of the compound is XY_2.If its empirical formula weight is equal to its vapor density; calculate the molecular formula of the compound. [2]

2. Heat on lead nitrate gives yellow lead (ii) oxide, nitrogen dioxide and oxygen. Calculate the total volume of NO_2 and O_2 produced on heating 8.5 g of lead nitrate. [Pb=207, N=14, O=16] [2+2]

3. Answer the following: [1+2+1]

a. Define spurious alcohol.

b. Write two uses of ethyne.

c. Define co-ordinate bond.

Q VI.

1. Draw and name all possible isomers of C_4H_{10}. [4]

2. Draw an Electron dot Diagram of Hydronium ion and Magnesium oxide. [4]

3. Why funnel arrangement is require during HCℓ acid preparation. [2]

Q VII. A.

1. Write the balanced equation when Nitride of magnesium reacting with warm water. [1]

2. Name the drying agent used in the lab preparation of ammonia. [1]

3. Name the two gases which can be used to study the fountain experiment. And state the common property demonstrated by the fountain experiment. [2+1=3]

B. Compare electrovalent compound and covalent compound. [3]

C. Calculate the percentage composition of nitrogen in aluminum nitride. [2]

[Aℓ=27, N=14]

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